Reprinted from the German Journal of Psychiatry · http://www. gjpsy. uni-goettingen. de · ISSN 1433-1055

Case Report

Olanzapine Dependence

Romika Dhar, Ajeet Sidana, and Tushar Singh

Department of Psychiatry, Government Medical College & Hospital, Chandigarh, India

Corresponding author: Romika Dhar, M. D., Senior Resident, Dept. of Psychiatry, Government Medical College and Hospital, Sector 32, Chandigarh, 160047, India; E-mail: romika_dhar@yahoo.com

Abstract

Olanzapine is the second-generation antipsychotic most frequently prescribed for treatment of schizophrenia and bipolar affective disorder. Its side effects include sedation, weight gain, hyperglycemia and hyperlipidemia. It is considered to be devoid of any abuse or dependence potential. We report a case of olanzapine dependence in a patient with past history of multiple substance dependence (German J Psychiatry 2010; 13: 51-53).

Keywords: olanzapine, dependence

Received: 22.2.2010
Revised version: 10.3.2010
Published: 17.3.2010

Introduction

Olanzapine is a serotonin-dopamine-antagonist which is structurally similar to clozapine, and is classified as a thienobenzodiazepine. Olanzapine is now widely used in the treatment of schizophrenia and bipolar affective disorder. Although considered safe as compared to other antipsychotic medications, a large volume of evidence has suggested debilitating side effects of olanzapine. The most bothersome being weight gain, hyperglycemia and hyperlipidemia (Allison et al., 2001; Lindenmeyer et al., 2003), agranulocytosis (Steinwachs et al., 1999), mania (Lindemeyer et al., 1998; Fitz-Gerald et al., 1999; Borysewicz et al., 2000; Chavan et al., 2003) and dermatological effects like purpuric rashes (Varghese et al., 2005) and xanthomas (Chang et al., 2003). All these side effects occurred in patients while being on olanzapine therapy, for various psychiatric conditions. But, to the best of our knowledge till date, there has been no report of non-therapeutic, abusive pattern use of olanzapine by a person.

We report here, a case where a patient exhibited abuse and dependence pattern with olanzapine, without any coexisting psychiatric illness.

Case Report

A 34 year old male, graduate, married, bank employee belonging to a nuclear family of middle socio-economic status, accompanied by his wife, presented to our de-addiction clinic with a history of intake of prescription drugs (nature unknown to the informant) for the last 8 months.

On detailed history taking and assessment, it was found that the patient had been consuming olanzapine tablets. The patient admitted to consuming these tablets since 8 months when he had stopped achieving sedation with benzodiazepines which he then had stopped abruptly on suggestion of a chemist, and started taking olanzapine 10 mg tablets once every night to achieve sleep. The intake was regular from the start, with patient experiencing desired sedation and felt no unpleasant symptoms with the drug. During the next 6–8 weeks, the patient experienced disturbed sleep, restlessness and palpitations if he missed even a single dose of olanzapine. Gradually, he had to increase the dose of olanzapine to achieve sedation over a period of next 2–3 months with the current intake of 4–5 tablets of olanzapine per night (40–50 mg strength) in order to achieve the desired effects which

primarily were better sleep and a calming effect, relief from occasional headache especially when he had more work load.

His past history revealed that he had been dependent on multiple types of substances (alcohol, opioids, zolpidem, benzodiazepines) at different points of time during the last 5 years and he had fulfilled the criteria for a diagnosis of Multiple Substance Dependence as per ICD-10. He was currently completely abstinent from alcohol and opioids since last 18 months and from benzodiazepines since last 8 months. There was no past history of any medical, surgical, or psychiatric illness like mood disorder or psychosis and no family history of any psychiatric illness. He was admitted to de-addiction ward for detoxification treatment. All investigations including a complete haemogram, renal and liver function tests, fasting blood sugar and serum electrolytes were conducted and found to be within normal range.

During the ward stay, his craving for olanzapine and drug seeking became apparent when he was caught with strips of olanzapine tablets (10 mg strength) which he had brought inside the ward by writing its brand name on a forged prescription slip. He claimed he had no knowledge about its true therapeutic indication and considered it a better form of "sleeping pills". His craving for olanzapine was evident when he was caught several times, trying to steal the tablets from the nursing station in the ward. He was prescribed lorazepam 2 mg t. i. d for first 3 days and gradually decreasing it to 2 mg per day but was still experiencing insomnia and palpitations. The patient was also taken up for psychotherapy consisting of multiple sessions of motivation enhancement therapy during his ward stay of 15 days. However, he was found to be poorly motivated for treatment. On the day of his discharge, he was abstinent for 15 days from olanzapine, but was subsequently lost to follow up.

Discussion

Olanzapine has not been systematically studied in humans for its potential for abuse, tolerance, or physical dependence. To our knowledge, this is the first case in our country suggestive of dependence on olanzapine characterized by tolerance, withdrawal symptoms on discontinuation and persistent desire to take the substance. However, there has been a case vignette reporting strong craving and dependence pattern use of olanzapine by a chronic paranoid schizophrenia patient (Chavan et al., 2003) and abuse by a patient diagnosed with bipolar affective disorder with multiple-substance dependence (Reeves, 2007).

Paradoxically, a pilot trial of 12 weeks was conducted in individuals with alcohol dependence with a variant in the gene that expresses D_4 receptors which influences craving for alcohol which found that olanzapine is particularly effective at reducing craving among individuals with this variant (Hutchison et al., 2006). Trials are being conducted on a larger scale now currently in phase III (Hutchison et al., 2006). Olanzapine has sedating properties and therefore can produce an overall calming effect. When taken regularly over a period of time, all sedatives can cause physiological and psychological dependence. So, by a similar mechanism, olanzapine too can produce dependence, as the case might be with our patient. Intentional misuse of psychotropic agents is not a new phenomenon. Abuse of anticholinergic drugs for stimulant, euphorogenic and hallucinogenic effects has been reported in over 100 patients (Dilsaver et al., 1988). Tricyclic antidepressants are occasionally abused for their euphorogenic effects (Land et al., 1991), which may be related to their anticholinergic properties. Cohen et al. (1978) investigated abuse of amitriptyline in patients enrolled in a methadone treatment program and found that 25% of the patients admitted to taking amitriptyline to achieve euphoria and 35% had drug screens positive for the drug. Among atypical antipsychotics, abuse of quetiapine for its sedative and anxiolytic effects has been reported to be prevalent in correctional facilities with the abuse including intranasal snorting of pulverized tablets (Pierre et al., 2004). Even if olanzapine should prove to have potential for abuse, it remains a useful medication for treatment of schizophrenic and bipolar patients, and has been demonstrated to be safe and effective in patients with schizophrenia and comorbid substance abuse disorders (Littrell et al., 2001). Prospective studies have been conducted to assess abuse and dependence potential of olanzapine but have shown little or no potential of abuse or physical dependence in animal experiments with oral doses up to 15 times the maximum recommended human daily oral dose 20 mg. However, it is not possible to predict the extent to which a psychoactive drug can be misused. Therefore, careful evaluation and observation of each patient is required for a possible misuse, and abuse of psychotropic drugs like olanzapine.

References

Allison DB, Casey DE. Antipsychotic-induced weight gain: a review of the literature. J Clin Psychiatry 2001; 62(Suppl 7):S22–S31.

Beasley CM. Efficacy of olanzapine: An overview of pivotal clinical trials. J Clin Psychiatr Monograph 1997; 15:16-18.

Borysewicz K, Borysewicz W. A case of mania following olanzapine administration. Psychiatria Polska 2000; 34(2): 299-306.

Chang HY, Ridky TW, Kimball AB, Hughes E, Oro AE. Eruptive xanthomas associated with olanzapine use. Arch Dermatol 2003;139:1045-8.

Chavan BS, Sidana A, Singh GP. Olanzapine induced mania: A case report. Indian J Psychiatry 2003, 45(I), 56-57.

Cohen MJ, Hanbury R & Stimmel B. Abuse of amitriptyline. JAMA 1978;240: 1372-73)

Dilsaver SC. Antimuscarinic agents as substances of abuse: A review. J Clin Psychopharmacol 1988 ;8:14-22.

Fitz-Gerald MJ, Pinkofsky HB, Brannon G, Dandridge E, Calhoun A. Olanzapine-induced Mania. Am J Psychiatry 1999; 156(7): 1114. http://clinicaltrials.gov/show/NCT00746785

Hutchison EK, Ray L, Sandman E, Rutter MC, Peters A, Davidson D et al. The effect of olanzapine on crav-

ing and alcohol consumption. Neuropsychophar macol 2006; 31, 1310–1317.

Land W, Pinsky D & Salzman C . Abuse and misuse of anticholinergic medications. Hospital & Community Psychiatry 1991;142: 580-81.

Lindenmayer JP, Klebanov R. Olanzapine-induced manic like syndrome. J Clin Psychiatry 1998; 59 (6): 318-319.

Lindenmayer JP, Czobor P, Voavka J, Citrome L, Sheitman B, McEvoy JP et al. Changes in glucose and cholesterol levels in patients with schizophrenia treated with typical or atypical antipsychotics. Am J Psychiatry 2003; 160:290–296.

Littrell KH, Petty RG, Hilligos NM, Peabody CD & Johnson CG. Olanzapine treatment for patients with schizophrenia and substance abuse. J Substance Abuse Treatment 2001;21:217-21.

Pierre JM, Shnayder IG, Wirshing DA & Wirshing WC. Intranasal quetiapine abuse [letter]. Am J Psychiatry 2004; 161: 1718.

Reeves RR. Abuse of olanzapine by substance abusers. J Psychoactive Drugs 2007;39(3):297-9.

Steinwachs A, Grohmann R, Pedrosa F, Rüther E, Schwerdtner I. Two cases of olanzapine-induced reversible neutropenia. Pharmacopsychiatry 1999; 32(4): 154-156.

Varghese ST, Balhara YP, Shyamsunder S, Mondal A. Dermatological side effects of olanzapine. Indian J Med Sci 2005;59:320-1